

Claims:

1. Tool consisting at least partially of plastic material,
characterized in that the tool has a portion of nanoscale
5 particles embedded in the plastic material.
2. Tool according to claim 1, characterized in that it
comprises a plastic material block material or a casting
material.
- 10 3. Tool according to claim 1 or 2, characterized in that the
particle size of the nanoscale particles is predominantly
in the range between about 15 nm and 250 nm.
- 15 4. Tool according to any of the claims 1 to 3, characterized
in that the portion of the nanoscale particles in the
plastic material is between about 5 wt% and about 60 wt%,
based on the total weight of the composite materials.
- 20 5. Tool according to any of the claims 1 to 4, characterized
in that the nanoscale particles are widely homogeneously
distributed in the plastic material.
- 25 6. Tool according to any of the claims 1 to 5, characterized
in that it is prepared starting from nanoscale particles
provided with a surface modifier.
- 30 7. Tool according to any of the claims 1 to 6, characterized
in that the plastic material has a glasslike amorphous
structure.
8. Tool according to any of the claims 1 to 7, characterized
in that a portion of a material with gliding properties

is embedded into the plastic material of the tool, preferably a portion between about 10 wt% and about 60 wt%, more preferably between about 20 wt% and about 30 wt%, based on the total weight of the composite material.

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9. Tool according to claim 8, characterized in that graphite and/or molybdenum sulfide is embedded into the plastic material of the tool as the material with gliding properties.

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10. Tool according to any of the claims 1 to 9, characterized in that it consists at least partially of polyurethane, an epoxy resin or plastic materials with comparable properties.

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11. Tool according to any of the claims 1 to 10, characterized in that it is a conversion tool, in particular a cupping tool.

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12. Tool according to any of the claims 1 to 11, characterized in that it is a stamp, a sheet metal holder or a matrix for the cupping of metal parts.

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13. Process for converting work pieces, in particular metal parts, using at least partially a conversion tool consisting of plastic material, characterized in that the conversion tool contains a portion of nanoscale particles embedded in the plastic material.

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14. Process according to claim 13, characterized in that the conversion tool serves as cupping tool in a process of cupping sheet metals, in particular of bodies for automobiles.